

# DELIVERABLE REPORT



Project acronym: INPUT  
Project number: 687795

<b>Deliverable</b>	<b>D3.3, Templates for clinical test advice and feedback</b>
Dissemination type:	R – report
Dissemination level:	PU
Planned delivery date:	2017-01-31
Actual delivery date:	2017-01-25
Reporting Period:	1

**WP3, Task 3.3, Clinical test coordination**  
**Lead: OBHP**

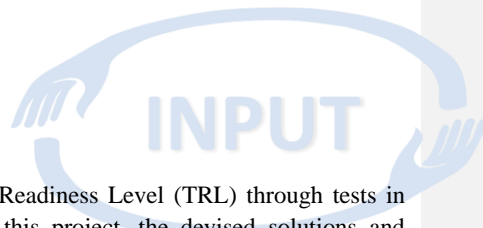
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 687795



## 1 DESCRIPTION OF THE TASK

Since clinical applicability and achieving high Technology Readiness Level (TRL) through tests in relevant environments are the main focuses and goals of this project, the devised solutions and prototypes will routinely be evaluated by the medical research partners (OSS, UMCG). The results of these tests will in turn influence the design progression of the developed socket materials and software (agile project management). OBHP will mediate and support the exchange between the clinical and technical working groups by:

- Providing a template for instructions of the developer to the clinical staff on how to use the tested system and targeted questions to invoke helpful suggestions.
- **Providing a template for the clinical staff to give informative feedback of the results to the developing group (laudation, problems, suggested solutions)**

## 2 DESCRIPTION OF DELIVERABLE

In order to maximize the outcome of clinical tests, a consortium-internal standardized feedback form will be created to allow clinical partners to give suggestions to the developing partners in a structured and unified way.

## 3 IMPLEMENTATION

The feedback forms which are attached to this deliverable were devised under the lead of OBHP with the support from all other partners. This way, the best achievable usability of the feedback forms for all partners is achieved.

Whenever applicable, these project internal feedback forms will be used to guide development cycles in the right direction. This is necessary since in most clinical trials it will not be possible for all developing partners (hardware, software) to be physically present. A structured, unified feedback process from the testing partners to the developing partners bears therefore the chance to channel the information in a structured manner, to highlight both successes and failures of particular components of the INPUT system tested and therefore to guide the development and improvement cycles in the dynamic development setup adopted in INPUT.

Along with each test performed, the test specific results (according to the applied tests such as SHAP, Box & Blocks, Clothespin Relocation, 3D motion tracking of ADLs,...) shall be supplied by the testing partner to the developing partner along with the feedback forms attached to this deliverable.

**GENERAL QUESTIONS**



Test location: .....(Partner)

Tester: ..... (Name)

Test Date |\_|\_| |\_|\_| |\_|\_|\_|\_| (DD / MM / YYYY)

Subject ID: .....

Date of Birth: |\_|\_| |\_|\_| |\_|\_|\_|\_| (DD / MM / YYYY)

Height: |\_|\_|\_| cm

Weight: |\_|\_|\_| kg

Gender:  Male  Female

Amputated Side:  left  right

Date of Amputation: |\_|\_| |\_|\_| |\_|\_|\_|\_| (DD / MM / YYYY)

Stump length: |\_|\_|cm (measured from elbow crook to stump end)  
|\_|\_|cm (measured from olecranon to stump end)

Stump diameter: |\_|\_|cm (measured at elbow crook)  
|\_|\_|cm (measured at stump middle)  
|\_|\_|cm (measured at stump end)

Reason for Amputation:  cancer  vascular disease  trauma  infection  
 dysmelia  
 other: .....

Currently fitted prosthetic device: .....

Materials used (socket, liner,...) .....

Fitting with current prosthesis: |\_|\_| |\_|\_|\_|\_| (MM / YYYY)



Switching between modes?

- Co-contraction
- Single open impulse
- Single close impulse
- Physical switch
- Long open
- 4-channel control
- other

Hours of wearing prosthesis

per day:

|\_|\_| h

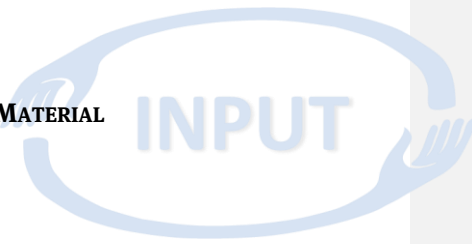
Other comments:

.....

.....

.....

**INVOLVED INPUT TESTING MATERIAL**



Tested hardware:

- Michelangelo
  - Opposition grip
  - Lateral grip
  - Hand open
- Wrist rotation
- Wrist flexion/extension
  
- 3D printed able-bodied adapter (OBHP)
- Sweat band to fix electrodes
- Scissor fence grid
- Prosthetic socket
  - Material: .....
  
- equidistant electrode positioning
- targeted electrode positioning
  
- Electrode liner (OBG)
- Tabletop amplifier (OBG)
- Portable amplifier (OBG)
- 13E200-DC electrodes. Number of channels:
- 13E200-AC electrodes. Number of channels:
  
- Portable machine learning controller (IDSIA)
  - ..... (.....)
  - ..... (.....)
  - ..... (.....)



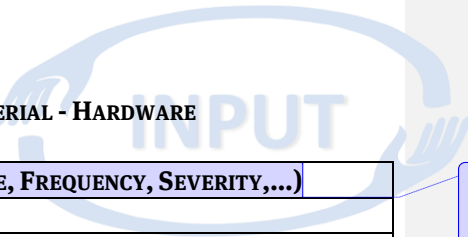
Tested software:

- WristHandRecording Tool (OBHP)
- PatientTrainingTool (OBHP)
- PC machine learning software suit (IDSIA)
- .....
- .....
- .....

Applied tests:

- Box and Blocks
- SHAP
- Clothespin Relocation
- Set of ADLs (to be specified in supporting documents)
  - In conjunction with 3D activity tracking
- Virtual tasks (TAC, Fitt's Law, Serious Game ...)
- Offline data processing
- .....
- .....

## FEEDBACK ON TESTING MATERIAL - HARDWARE



### MECHANICAL FAILURES (CONDITION OF OCCURRENCE, FREQUENCY, SEVERITY,...)


**Kommentar [SAM1]:** Examples:  
Failure in hardware, such as wires or plugs;  
location of the electrodes was bad in the  
liner; signal quality not high enough;

### USER COMFORT (SOCKET FIT, WEIGHT, THERMAL, ...)


**Kommentar [SAM2]:** Examples:  
Electrode lift-offs observed; Wearing  
comfort of prosthesis, socket, liner etc.,  
power management (battery lifetime, wall  
plug connectors,...), system volume,  
bulkiness, ease of integration into prosthesis  
and socket

### EASE OF USE (SETUP)

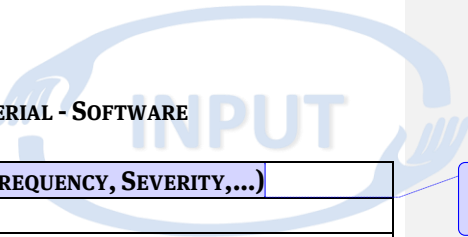

**Kommentar [SAM3]:** Examples:  
Hardware connections; plugs; cables;  
"fumbling" required; Setup time

### EASE OF USE (OPERATION)


**Kommentar [SAM4]:** Examples:  
Quality of the control, Subjective rating of  
test result, subjective rating of how easily  
user understood what to do

### FREE COMMENTS


## FEEDBACK ON TESTING MATERIAL - SOFTWARE



### BUGS, FAILURES (CONDITION OF OCCURRENCE, FREQUENCY, SEVERITY,...)


**Kommentar [SAm5]:** Examples: Crashes, Data not saved correctly; Frequency of resets/restarts required

### PERFORMANCE (RECOGNITION RATE, SMOOTHNESS, PROPORTIONALITY)


**Kommentar [SAm6]:** Examples: recognition rate, smoothness, proportionality

### EASE OF USE (SETUP, CONFIGURATION, TIME CONSUMPTION)


**Kommentar [SAm7]:** Examples: Ease of installing; driver compatibility issues; issues with missing software packages/libraries; running out of the box vs. repeated use

### EASE OF USE (OPERATION, HANDLING, REACTIVITY/SPEED)


**Kommentar [SAm8]:** Examples: fluidity of live signal display; laggyness of the SW; realtime performance; long runtime performance

### FREE COMMENTS
